

U.S. UTILITY PATENT APPLICATION  
of

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for

TABLE MOUNTING APPARATUS

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## TABLE MOUNTING APPARATUS

### Cross-Reference to Related Application

5        This application claims the benefit of U.S. Provisional Application Serial  
No. 60/408,316, filed September 5, 2002, the disclosure of which is expressly  
incorporated by reference herein.

### Background and Summary of the Invention

10        The present invention relates to bracket systems. More particularly, the  
present invention relates to a bracket system used to mount a table to a fixed support.

The present invention will be described primarily as an apparatus for mounting  
a table to the wall of a railroad passenger car, but it will be understood that the same  
may be used to couple any substantially horizontal surface to a generally vertical  
support surface.

15        According to an illustrative embodiment of the invention, the bracket system  
comprises a first bracket portion having an arcuate arm and a second bracket portion  
having an arcuate retaining slot configured to slidably receive the arcuate arm. The  
first bracket portion includes a mounting flange configured to couple the first bracket  
portion to a support surface.

20        Further according to the illustrative embodiment, the first bracket portion  
includes a pivot seat that is designed to support an alignment lobe or knob of the  
second bracket portion when the first bracket portion engages the second bracket  
portion.

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According to another illustrative embodiment of the invention, a first bracket portion includes a first arcuate flange configured to be coupled to a generally vertical wall surface and a second bracket portion includes first and second arcuate surfaces that define an arcuate retaining slot of complementary cross section to the first bracket portion and configured to receive the arcuate flange of the first bracket portion. The engagement of the first and second bracket portions prevents substantial movement in either orthogonal or vertical directions relative to the generally vertical wall surface. The second bracket portion further comprises a mounting flange configured to mount the second bracket portion to a support surface.

Further according to the illustrative embodiment, the second bracket portion includes an alignment lobe or knob and the first bracket portion includes a pivot seat designed to engage the alignment lobe. In one illustrative embodiment, the alignment lobe is substantially cylindrical in nature.

Further according to the illustrative embodiment, the first bracket portion further comprises a plurality of holes designed to receive a plurality of screws to couple the first bracket portion to the generally vertical wall.

Further according to the illustrative embodiment, the second bracket portion further comprises a plurality of holes designed to receive a plurality of screws to couple the second bracket portion to the support surface.

Further according to the illustrative embodiment, the support surface comprises a table top including a first end, a second end coupled to the second bracket portion, a leg hingedly connected to the first end of the table top and a height-adjuster

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coupled to the leg. In one illustrative embodiment, the height-adjuster is a thumb screw leveler.

Further according to the illustrative embodiment, the bracket assembly includes a first lock configured to couple the leg to the support surface when the leg is  
5 in a folded position parallel to the support surface.

Further according to the illustrative embodiment, the bracket assembly includes a second lock configured to constrain the leg in an extended position substantially orthogonal to the support surface.

According to another illustrative embodiment of the invention, end plates are  
10 coupled to opposing ends of the second bracket. The end plates prevent the second bracket portion from moving laterally with respect to the first bracket portion.

Additional features and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the presently perceived best mode of carrying out the invention.

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### Brief Description of the Drawings

The detailed description particularly refers to the accompanying figures in which:

Fig. 1 is a side elevational view, in partial schematic, of an illustrative  
5 embodiment bracket system showing the bracket system including a first bracket portion and a second bracket portion movably coupled to the first bracket portion;

Fig. 2 is a side elevational view, in partial schematic, similar to Fig. 1 but showing the second bracket portion in a raised position;

Figs. 3 is a side elevational view, in partial schematic, similar to Fig. 1 but  
10 showing the first bracket portion supported by a vertical support surface having a negative slope;

Fig. 4 is a top plan view of the bracket system and table assembly mounted to a generally vertical support surface;

Fig. 5 is a front elevational view of the table assembly of Fig. 4;

15 Fig. 6 is a side elevational view showing the bracket system and the table assembly as the table and second bracket portion are being inclined and positioned for attachment to the first bracket portion;

Fig. 7 is a side elevational view showing the bracket system and the table assembly as the table and second bracket portion are engaging the first bracket portion  
20 and the table top is adjusted to a horizontal attitude;

Fig. 8 is a side elevational view showing the bracket system and the table assembly as the leg is positioned vertically to support the support surface; and

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Fig. 9 is an enlarged perspective view of an alternative embodiment bracket system of the present invention showing an endplate coupled to the end of the second bracket portion.

Detailed Description of the Drawings

While in the following description the present invention will be described primarily as an apparatus for coupling a table to the wall of a railroad passenger car, it should be understood that the same may be used to couple any generally horizontal surface to a generally vertical support surface. More particularly, it should be appreciated that the present invention may find applicability in mounting a generally horizontal surface, such as a table or a bed, to a generally vertical surface, such as a wall, in any environment, including a motor home.

Referring to the drawing figures, a bracket system 10 according to an illustrative embodiment of the present invention is illustrated as including a first bracket portion 12 and a second bracket portion 14 movably coupled to the first bracket portion 12. The first bracket portion 12 is configured to be coupled to a generally vertical support surface, such as a wall 16. Likewise, the second bracket portion 14 is configured to be coupled to a horizontal support surface, such as a table top 18. The first bracket portion 12 includes a mounting flange 20 including a plurality of mounting apertures configured to receive conventional fasteners, such as flat head wood screws 24. A male portion, illustratively an arcuate arm or flange 26, extends outwardly from the mounting flange 20 proximate an upper end thereof.

The second bracket portion 14 includes a mounting flange 28 including a plurality of mounting apertures 30 configured to receive conventional fasteners, such as flat head wood screws 32, in order to secure the table top 18 to the second bracket portion 14. Opposing first and second arcuate retaining surfaces 34 and 36 define an arcuate retaining slot or female portion 38 which is configured to receive the arm 26

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of the first bracket portion 12. The first retaining surface 34 is defined by an arm 40, while the second retaining surface 36 is formed by an alignment knob or lobe 42.

As illustrated in Figs. 2 and 3, when the arcuate arm 26 is inserted into the arcuate retaining slot 38, the second retaining surface 36 of the lobe 42 rests on an upper surface or pivot seat 44 of the arm 26 thereby allowing the second bracket portion 14 to be moved pivotally with respect to the first bracket portion 12.

Illustratively, the arcuate retaining slot 38 and the second retaining surface 36 of the lobe 42 permit the first bracket portion 12 and the table top 18 to be pivotally moved upwardly by approximately 45° to allow ingress or egress into seating adjacent to the table top 18 without requiring the removal of the table top 18 from the wall 16. The cooperation of the arcuate retaining slot 38 and the arm 26 restrict the second bracket portion 14 from moving vertically with respect to the first bracket portion 12 or horizontally away from the wall 16.

In the illustrative embodiment, the arcuate retaining slot 38 has an effective length longer than that of the arm 26, thereby allowing increased movement of the arm 26 within the retaining slot 38. More particularly, the retaining slot 38 may be dimensioned with respect to the arm 26 to permit the table top 18 to remain in a substantially horizontal position even when the wall 16 has a substantially negative angle with respect to vertical, such as the 10° negative angle illustrated in Fig. 3.

In one illustrative embodiment of the present invention, the bracket system 10 is utilized in combination with a table assembly 46 including the table top 18. The table assembly 46 illustratively includes a table leg 48 pivotally coupled to the table top 18 through a hinge 50. A first lock 52 is configured to secure the table leg 48 in a



storage position substantially parallel to the table top 18, while a second lock 54 is supported in spaced relation to the first lock 52 and is configured to secure the table leg 48 in a substantially perpendicular operative position. More particularly, the hinge 50 is coupled to the table leg 48 and the table top 18 thereby allowing the table leg 48 to be moved from a storage position parallel to the table top 18 to the operative position substantially perpendicular to the table top 18. When the table leg 48 is in the storage position, it is coupled to the first lock 52 and held in place. When the table leg 48 is in the operative position, it couples to the second lock 54 and is likewise held in place. The first and second locks 52 and 54 are utilized to prevent the table leg from inadvertently moving when the table assembly 46 is being used or moved to storage. A conventional thumb screw leveler 55 may be coupled to an end of the table leg 48 to assist in leveling the table top 18.

Fig. 9 illustrates a further illustrative embodiment of the bracket system 10' of the present invention illustrating a retaining member, such as end plate 56, secured to an end of the first bracket portion 12. A pair of end plates 56 are secured to opposing ends of the first bracket portion 12 in order to restrict the lateral movement of the second bracket portion 14 with respect to the first bracket portion 12 along the longitudinal axis 58 of the first bracket portion 12.

In operation, the table assembly 46 is inclined to align the arcuate arm 26 and the arcuate retaining slot 38 by allowing the alignment lobe 42 to rest on the pivot seat 44. Once aligned, the table assembly 46 is rotated in a direction 60 causing the male portion 26 to engage the female portion 38 until the table top 18 is in a substantially horizontal attitude. First lock 52 is then disengaged and leg 48 is rotated to a

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substantially vertical position until second lock 64 is engaged to hold leg 48 in the substantially vertical position. Thumb screw leveler 55 is then adjusted to maintain the table top in a substantially horizontal attitude.

5           Although the invention has been described in detail with reference to preferred embodiments, variations and modifications exist within the scope and spirit of the invention as described and defined in the following claims.